

porarily displaced from the Chechen Republic was highly efficient and may be recommended for humanitarian operations in disasters in other countries.

Keywords: Caucasus; Chechen Republic; All-Russian Centre for Disaster Medicine; ARCDM; refugee settlements
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Training for Work in Emergency Settings

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Large-scale movements of refugees and other forced migrants have become a defining characteristic of the contemporary world confronting us with a range of practical and ethical dilemmas. The provision of basic health care requires innovative approaches to the implementation of accurate public-health interventions.

Until the early 1980s, there were no models for response, and agencies responded with their own staff, supplies, egos, and philosophies. From the early 1980s, an analysis of the response to the health needs of large, displaced populations was undertaken. A general framework for the implementation of priority health interventions was developed, and there were attempts to raise awareness and shared understanding for a common approach.

The need for training of personnel was articulated. Increasingly, emergency aid agencies insist that their staff attend training for optimal responses in the field. The first available course was the Health Emergencies and Large Populations (HELP) course conducted by a consortium of international organizations in Geneva and other settings. The first Emergency Health Course in Australia was introduced in 1998, and includes:

1. Analysis of the context of complex human emergencies, including refugee crises;
2. Identification and management of the major public health and nutritional consequences of emergencies;
3. Development of relevant public health assessment and response skills; and
4. Recognition of the need for a multi-sectoral approach to reducing the health impact of emergencies.

The presentation will describe the framework for priority health interventions in emergency settings and the scope of training needed to enhance the response of emergency health personnel.

Keywords: assessment; complex human emergencies; courses; emergency health; interventions; management; models; non-governmental organizations (NGOs); nutrition; public health; response

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Forum: International Prehospital Research

Rallye Rejviz—An EMS Quality Improvement Tool

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The Rallye Rejviz (RR) is an international professional exercise and competition for emergency medical services (EMS) teams that began in 1997. It brings international emergency teams together in the Jeseniky Mountains of the Czech Republic, to compare performance and to exchange information about techniques and approaches, while building friendships and opportunities for cross-border cooperation.

Experts from more than 10 countries prepared the program for Rallye Rejviz 2003. It will serve not only as a competition, but also as a workshop and conference. Participants will include the "working class" of EMS—people who would not ordinarily get to meet each other. Data gained in RR will serve as a foundation for further research in emergency medicine, for companies designing ambulances and medical technology, and also for those who prepare standards and algorithms for EM. This information then, can be used for developing or improving standards for organization, equipment, training, and interventions in EMS.

The RR Project could develop into a joint exercise among teams from different countries. They could test equipment and communications compatibility as well as their ability to work together. Every RR includes a disaster scenario, which easily could be modified so that teams from different countries would have to work together. Information from this exercise would be invaluable to the planning of international disaster responses.

Keywords: competition; Czech Republic; disaster; EMS; international; Rallye Rejviz

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Ambulance and Anthrax — The Challenge of Infection Control and Infectious Disease in Paramedic Emergency Care

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Background/Purpose: The threat of bioterrorism dominates much the work of emergency services personnel globally. Infection control in the emergency care setting that relates specifically to paramedics, remains largely unexamined. Paramedic care must include sound infection control practices to achieve broad clinical care outcomes, while complying with public health legislation. Rigorous infection control practice is critical to the health and safety of

patients and staff.

Methods: Survey methods.

Results: The response rate was 55.3% (1,258/2,274). Paramedic knowledge and reported practice of infection control were poor. Paramedic practices surrounding management of infectious diseases and key infection control strategies including staff health, waste disposal, management of occupational exposure, and decontamination practices were poor. The paramedic-reported practices of infection control were independent of factors such as age, length of service, and level of qualification. Participants self-reported a lack of education, training, and policy standards of infection control. This resulted in poor infection control knowledge and practice. Paramedics expressed serious concern over decontamination practices, a lack of access and knowledge of proper use of personal protective equipment, and concern over occupational exposure management and staff health.

Conclusions: This study highlights the need for timely review of infection control practices and greater attention to bioterrorism in the prehospital, paramedic setting. Importantly, paramedic infection control practice and management programs ultimately should protect the staff and clients from infectious diseases and bioterrorism, and improve the quality of clinical care and care outcomes for the sick and injured.

Keywords: bioterrorism; decontamination; infection control; infectious diseases; management; paramedic; personal protective equipment (PPE); practices; prehospital; training

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Dispatch of 9-1-1 Calls — A Prospective Study of Criteria-Based Dispatch for Determining the Allocation of EMS Resources

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Objectives: The purpose of this study was to determine how effectively trained 9-1-1 Emergency Medical Dispatchers (EMDs), using a criteria-based dispatch (CBD) guideline, could determine which calls were emergent in nature and required the dispatch of paramedics capable of providing Advanced Life Support (ALS) care vs. a Basic Life Support (BLS) ambulance or other form of assistance.

Methods: A total of 1,483 cases were enrolled in the study. A survey instrument was completed by emergency department attending physicians for patients delivered by a 9-1-1 Emergency Medical Service System. A determination of whether the presenting chief complaint or discharge diagnosis warranted an immediate ALS response or other type of response was recorded and compared to the priority assigned by the EMD.

Results: Trained EMDs using a CBD screening exam achieved a predictive value of 99% determining who did not require the need of an ALS response, and a 50% predictive value of when ALS was indicated. The sensitivity of the test was 89%, and the specificity was 90%. The type II error ("β-error") of the 9-1-1 CBD screening exam was 1%.

Conclusions: The use of standardized CBD guidelines by EMDs to interrogate 9-1-1 callers, appears to be an effective way to determine which requests for assistance require the dispatch of ALS services and which do not. The passing of calls determined to be non-emergent to a serial call screening service, such as a 3-1-1 center or access/demand management system, appears to be an effective option for providing more efficient disposition alternatives to callers with non-urgent complaints.

Keywords: advanced life support (ALS); basic life support (BLS); criteria-based dispatch (CBD); emergency medical dispatch (EMD); emergency medical services system; paramedics; screening

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New Safety Initiatives in Ambulance Transport — Measuring and Managing Hazards, Risks, and Crashworthiness Outcomes in the EMS Environment

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Objectives: To identify occupant hazards and risks in ambulance transport by conducting ambulance vehicle crash tests, and to test injury mitigating countermeasures for occupants in this environment.

Methods: Epidemiological (FARS: 1989–2000, GES: 1989–1999) and field data were collected to identify crash types and configurations of the ambulance patient compartment. Standard ambulance vehicles were configured with anthropomorphic test devices (ATDs) and medical equipment, based on these prior studies. Full vehicle-to-vehicle crash testing was conducted using four vehicles in intersection crash scenarios. Instrumented ATDs, including a 3 year-old child, adult male, adult female, and medical equipment were positioned in the rear patient compartment in variable restraint configurations and seating positions to model the real world, and tested in both head-on and side impact scenarios for the 34 mph frontal and the 44 mph side impact crash tests.

Results: Occupant kinematics and forces demonstrated effective techniques for securing the child patient occupant. Unsecured occupants are a risk to themselves and to other occupants. Anticipated potential injury mechanisms were demonstrated particularly with head impacts onto hostile interior surfaces for unbelted occupants.

Conclusion: Crash testing demonstrates that the ambulance transport environment includes predictable and preventable occupant risks. Failure to use current methods of occupant protection for each occupant or to secure equipment effectively can result in catastrophic outcomes to all occupants. There is an urgent need for dissemination of this safety information, and to develop data driven performance based safety standards and designs in the USA.

Keywords: ambulance safety design; ambulance safety standards; ambulance transport safety; EMS occupant protection; patient transport

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